

**ABSTRACT OF THE DISCLOSURE**

A computer system that includes a computer and a storage system. The storage system includes a plurality of storage resources, each of which includes one or more storage volumes. Data sets are allocated among the storage volumes according to a policy of requirements and preferences based on separation of critical data sets so that a single point of failure in one storage resource will have minimal impact on data sets stored in a different resource. According to the method, a second currently stored data set to be separated from a new first data set is identified. A storage resource and any volume thereof that contains the second data set is identified. An eligible volume list for selection of a storage volume for the first data set is formed according to the policy. The storage volumes of the storage resource identified as containing the second data set are excluded from the eligible volume list. The storage volumes of the remaining storage resources are ordered according to a preference level of storage resources.